

## اعلان داوطلبی و دعوت به نرخ دهی

تاریخ اعلان: 29.01.2019

تاریخ ختم: 12.02.2019

از شما ویا شرکت شما دعوت بعمل میآوریم تا یک آفرمهر و امضاً شده شرکت تان را برای تدارکات ذیل  
ارایه نمایید:

پروژ: اعمار سرک جویچه وسط سرک

شهر: کابل

ناحیه: ششم شاروالی کابل

موقعیت: گذر/وسک 22

قرارداد کننده: شورای گذر/وسک

موسسه همکار تخنیکی: دفتر اسکان بشر ملل متحد (UN-Habitat)

نظارت کننده: شاروالی کابل و ناحیه ششم

تمویل کننده: دفتر کمک های ایالات متحده امریکا (USAID)

شرکت های علاقمند میتوانند اسناد داوطلبی را از سایت های ذیل ویا آدرس دفتر ساحوی هییتات واقع در ناحیه  
مربوطه دریافت نمایند.

<http://unhabitat.af/procurement/>

<http://kابل-tenders.org>

<http://procurement-notice.undp.org>

## پس منظر Background:

برنامه شهر برای همه (CFA) یک برنامه ملی دولت جمهوری اسلامی افغانستان میباشد که مدد و مظمن بهبود انکشاف شهری از طریق مدیریت زمین و رسمی سازی ساحات غیر پلانی بهبود سیستم مالی و مدیریت عواید شاروالی ها و تطبیق پلان های عمل استراتژیک شهری در محراق فعالیت های آنها قرار دارد.

این برنامه در همکاری نزدیک شاروالی ها، ریاست اراضی و وزارت شهر سازی و مسکن و اشتراک فعالانه مردم و منظم سازی گذرهای ستندرد به همکاری تخنیکی دفتر اسکان بشر ملل متحد (UN-Habitat) و کمک مالی اتحادیه اروپا و کمک های ایالات متحده امریکا (USAID) در یک دوره چهار ساله (2015-2020) مورد تطبیق قرار دارد.

این پروژه (اعمار سرک با جویچه و پیاده رو) در پروسه پلانگذاری عمل استراتژیک تشخیص، اعمار و مورد بهره برداری قرار خواهر گرفت.

## پیشنهاد (آفر) پروژه:

اعمار ( سرک با جویچه آن) واقع ناحیه (6) شهر کابل.

قیمت پیشنهاد باید شامل تمام مصارفات پروژه (مواد ساختمانی، کارگران مسلکی و غیر مسلکی، ماشینری، خدمات، ترانسپورت و غیره) بخاطر اعمار درست و با کیفیت پروژه پیشنهاد شده فوق باشد.

## بازدید از ساحه کار:

از تمام شرکت ها جداً تقاضا میگردد به تاریخ **05.02.2019 روز (سه شنبه). به ساعت (9) بجه (قبل) از ظهر** از ساحه باز دید نمایند.

محل: ( ناحیه ششم شهر کابل ) نمبر مایل ( انجینر یماسمیع 0729001492 ) و ( انجینر غلام سعید برومند 0791611082 )

## مشخصات تخنیکی:

تغییر و تعویض در مشخصات تخنیکی پروژه پیشنهادی این پیشنهاد قابل قبول نیست به جز تایید کتبی مسؤول پروگرام.

تمام اسناد پیشنهاد (آفر) مطابق به حصول و مقررات دولت جمهوری اسلامی افغانستان در چوکات و مقررات تهیه و تدارکات صورت میگردد و معیار های ذیل در جریان ارزیابی مدنظر گرفته میشود.

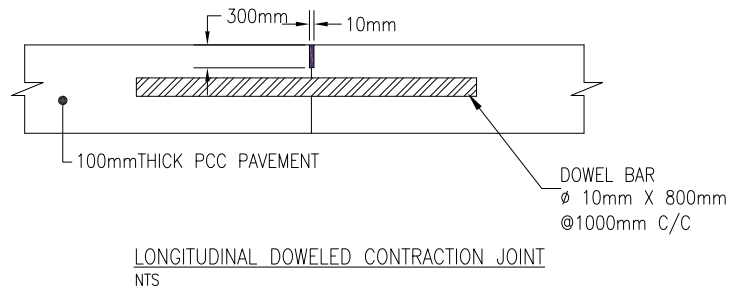
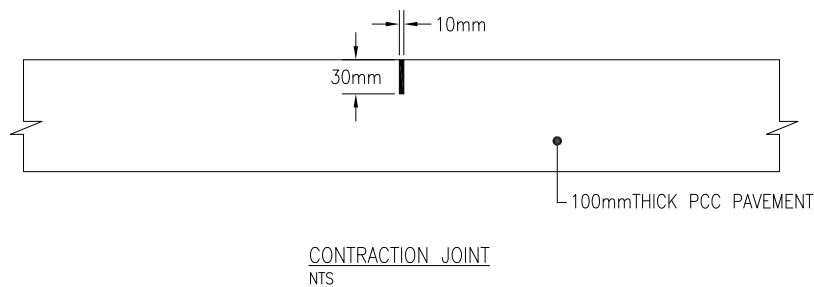
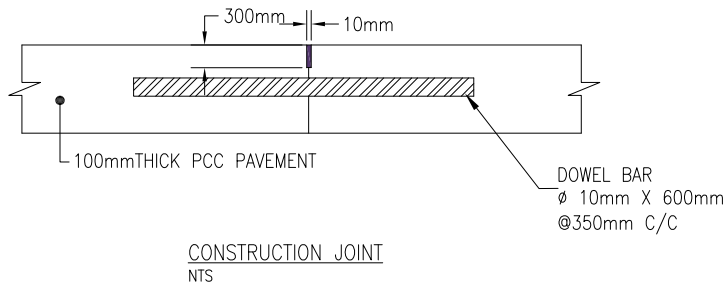
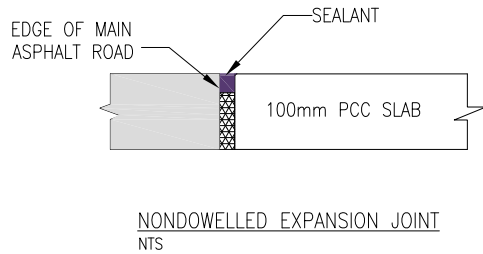
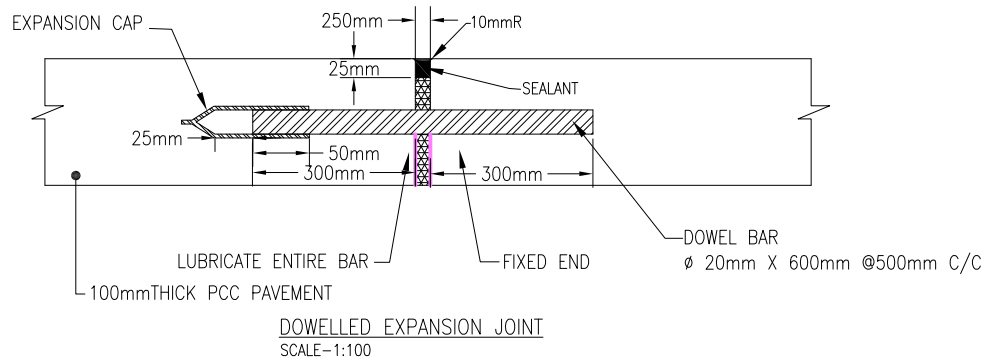
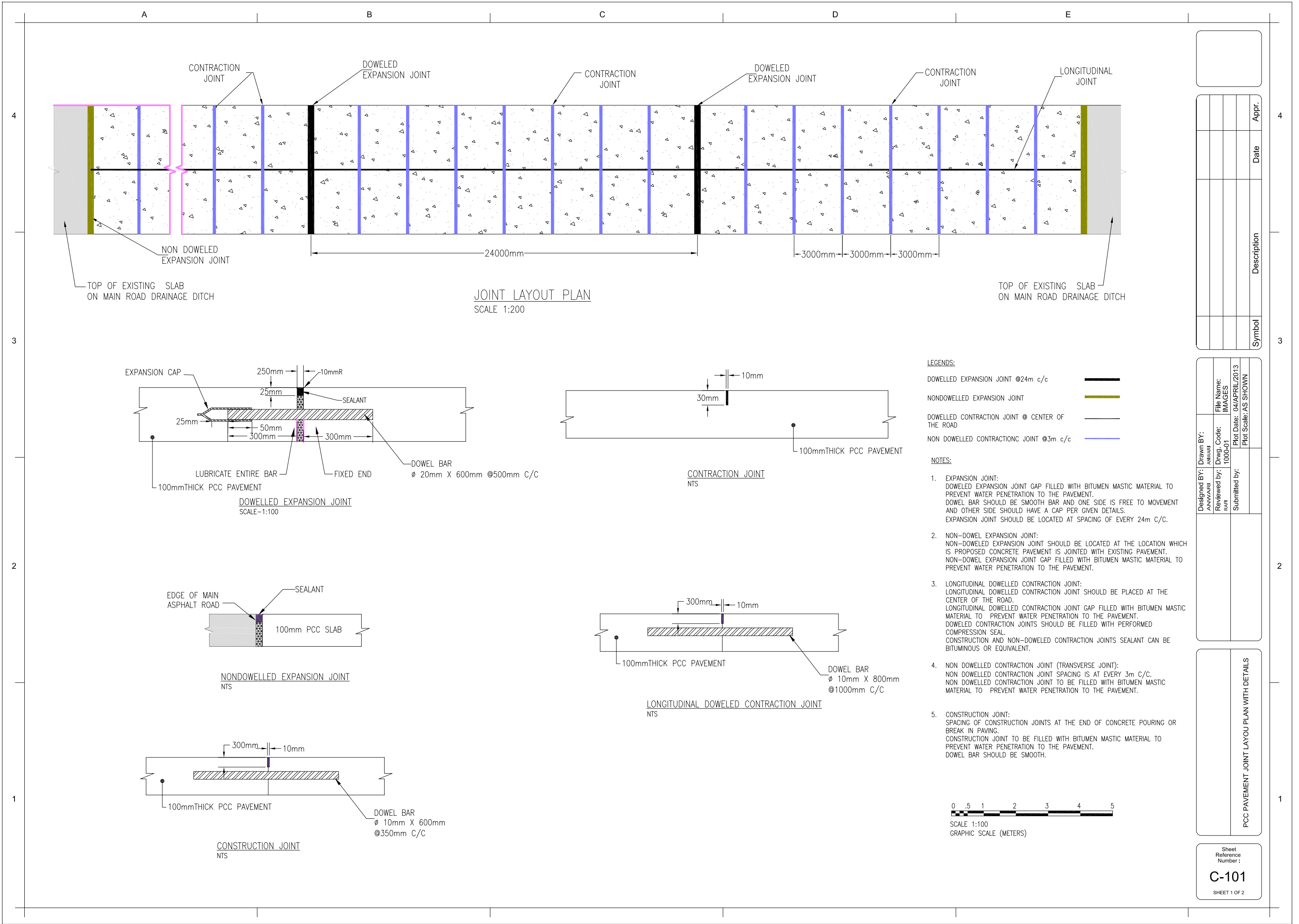
## معیار های ارزیابی:

1. کاپی جواز قابل اعتبار ساختمانی ضمیمه گردد.
  2. تجربه کاری مشابه حد اقل از سه پروژه که قیمت هر پروژه حد اقل ۳۰,۰۰۰ دالر امریکایی باشد با ارایه لست پروژه ها مشابه بادر ج معلومات ذیل ضمیمه گردد:
    - a. آدرس شرکت.
    - b. مسؤول شرکت.
    - c. قیمت پروژه ها.
    - d. مدت قرارداد.
    - e. شماره مایل و آدرس الکترونیکی.
  3. صورت حساب بانکی از سه ماه اخیر که بیلانس پولی شان حد اقل ۹,۰۰۰ دالر امریکایی باشد.
  4. جهت تطبیق پروژه پلان های ذیل باید ضمیمه گردد:
    - a. پلان کاری
    - b. پلان مصنویت کار
    - c. پلان کنترول کیفیت
  5. لست وسایط و وسایل کار از قبیل: رولر، گریدر، مکسر کانکریت، اکسکواتور، بلدوزر مشخص گردد که کرایه است و یا شخصی.
  6. لست پرسونل تخنیکی و اداری: یک نفر انجینر ساحوی، یک نفر سفتی انجینر، یک نفر کارمند اداری، یک نفر کارمند مالی و یک نفر آمر پروژه با خلص سوانح آنها.
  7. ۱۰ فیصد تضمین کاری از مجموعه قیمت پروژه بشکل کتبی ارایه گردد که این تضمین به مدت 6 ماه بعد از تکمیل پروژه اعتبار داشته باشد، (شرکت قراردادی باید تعهد نماید که دو هفته بعد از امضای قرارداد 10 فیصد از کل قیمت پروژه را به شکل بانک گرانتی نزد شورا قرار داده و این بانک گرانتی در جریان تطبیق پروژه و به مدت 6 ماه بعد از تکمیلی پروژه مدار اعتبار باشد).
  8. قیمت واقعی مناسب و کمترین.
- نوت: تمام اسناد ضروری خواسته شده را بصورت کامل داشته باشند. امکانات تخنیکی شرکت ها بعد از ارزیابی اسناد مالی و تخنیکی آن در ساحه بررسی میگردد.

مهر و امضای داوطلب

## دستور العمل برای داوطلبان:

1. از شما درخواست میشود تا آفر خود را تا ساعت ( 2 ) بجه بعد از ظهر به وقت محلی به تاریخ (12/02/2019) روز سه شنبه به آدرس دفتر ساحوی برنامه شهر برای همه (هیئات) واقع در ناحیه ششم شهر کابل تعمیر ناحیه به ( انجینر یماسامی 0729001492 ) تسلیم نمایند. تسلیمی آفرها بعد از تاریخ و ساعت ذکر شده فوق قابل قبول نمی باشد .
2. نرخ های شما باید برای مدت 90. روز از تاریخ دریافت آن قابل اعتبار باشد.
3. داوطلبان باید برای تمام تدارکات درخواست شده در ذیل نرخ بدهند، در غیر آن آفر آنها رد خواهد شد.
4. داوطلبان باید همه صفحات آفر را مهر و امضا نمایند.
5. هریک داوطلب باید صرف یک آفر ارائه نماید.
6. نرخ ها صرف باید به دالر داده شوند.
7. در صورتیکه تضمین برای اجناس، امور ساختمانی و خدمات درخواست شده لازم باشد، باید در آفرهای خود آن را ذکر نمایند.
8. امر خریداری به داوطلبانیکه آفرهای آنها در اصل جوابگو تشخیص شده و نازلترین و مناسبترین نرخ را ارائه نموده اند، قبل از ختم مدت اعتبار آفر صادر خواهد شد. علی الرغم موارد فوق، فرمایش دهنده حق قبول یا رد آفرها و لغو مراحل داوطلبی را برای خود محفوظ داشته و در هر زمانیکه خواسته باشد تمام آفرها را قبل از اعطای قرارداد رد نموده میتواند.
9. پرداخت ها با در نظر داشت فیصدی پیشرفت امور ساختمانی صورت خواهد گرفت.
10. ما منتظر دریافت آفرهای شما بوده و برای علاقمندی شما در این پروژه تشکر مینماییم.
11. نازلترین قیمت تنها معیار برای اعطا قرارداد نمیشد قیمت ها باید واقعی و مناسب باشد.

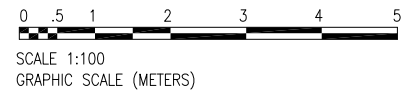


LEGENDS:

- DOWELED EXPANSION JOINT @24m c/c
- NONDOWELED EXPANSION JOINT
- DOWELED CONTRACTION JOINT @ CENTER OF THE ROAD
- NON DOWELED CONTRACTIONC JOINT @3m c/c

NOTES:

- EXPANSION JOINT:  
DOWELED EXPANSION JOINT GAP FILLED WITH BITUMEN MASTIC MATERIAL TO PREVENT WATER PENETRATION TO THE PAVEMENT.  
DOWEL BAR SHOULD BE SMOOTH BAR AND ONE SIDE IS FREE TO MOVEMENT AND OTHER SIDE SHOULD HAVE A CAP PER GIVEN DETAILS.  
EXPANSION JOINT SHOULD BE LOCATED AT SPACING OF EVERY 24m C/C.
- NON-DOWEL EXPANSION JOINT:  
NON-DOWELED EXPANSION JOINT SHOULD BE LOCATED AT THE LOCATION WHICH IS PROPOSED CONCRETE PAVEMENT IS JOINED WITH EXISTING PAVEMENT.  
NON-DOWEL EXPANSION JOINT GAP FILLED WITH BITUMEN MASTIC MATERIAL TO PREVENT WATER PENETRATION TO THE PAVEMENT.
- LONGITUDINAL DOWELED CONTRACTION JOINT:  
LONGITUDINAL DOWELED CONTRACTION JOINT SHOULD BE PLACED AT THE CENTER OF THE ROAD.  
LONGITUDINAL DOWELED CONTRACTION JOINT GAP FILLED WITH BITUMEN MASTIC MATERIAL TO PREVENT WATER PENETRATION TO THE PAVEMENT.  
DOWELED CONTRACTION JOINTS SHOULD BE FILLED WITH PERFORMED COMPRESSION SEAL.  
CONSTRUCTION AND NON-DOWELED CONTRACTION JOINTS SEALANT CAN BE BITUMINOUS OR EQUIVALENT.
- NON DOWELED CONTRACTION JOINT (TRANSVERSE JOINT):  
NON DOWELED CONTRACTION JOINT SPACING IS AT EVERY 3m C/C.  
NON DOWELED CONTRACTION JOINT TO BE FILLED WITH BITUMEN MASTIC MATERIAL TO PREVENT WATER PENETRATION TO THE PAVEMENT.
- CONSTRUCTION JOINT:  
SPACING OF CONSTRUCTION JOINTS AT THE END OF CONCRETE POURING OR BREAK IN PAVING.  
CONSTRUCTION JOINT TO BE FILLED WITH BITUMEN MASTIC MATERIAL TO PREVENT WATER PENETRATION TO THE PAVEMENT.  
DOWEL BAR SHOULD BE SMOOTH.



| Symbol | Description | Date | Appr. |
|--------|-------------|------|-------|
|        |             |      |       |
|        |             |      |       |
|        |             |      |       |

|                        |                        |                         |                             |
|------------------------|------------------------|-------------------------|-----------------------------|
| Designed BY:<br>ANWARI | Drawn BY:<br>ANWARI    | File Name:<br>IMAGES    | Plot Date:<br>04/APRIL/2013 |
| Reviewed by:<br>RAFI   | Drwg. Code:<br>1000-01 | Plot Scale:<br>AS SHOWN |                             |
| Submitted by:          |                        |                         |                             |

|                                             |
|---------------------------------------------|
| PCC PAVEMENT JOINT LAYOUT PLAN WITH DETAILS |
|---------------------------------------------|

**Joints in Concrete Construction**

Reported by ACI Committee 224

Grant T. Halverson<sup>1</sup>  
ChairmanRandall W. Proton<sup>1</sup>  
SecretaryPeter Barlow  
Florian G. Barth  
Alfred G. Bishara<sup>2</sup>  
Howard L. Boggs  
Merle E. Brander<sup>3</sup>  
David Darwin<sup>1</sup>  
Fouad H. Fouad<sup>2</sup>David W. Fowler  
Peter Gergely  
Will Hamen  
M. Nadim Hassoun  
William Lee  
Tony C. Lin<sup>2</sup>  
Edward G. Nawy<sup>3</sup>Harry M. Palmbaum  
Keith A. Paulina<sup>2</sup>  
Andrew Scanlon  
Ernest K. Schrader<sup>2</sup>  
Wenai Suaris  
Lewis H. Tuthill<sup>2</sup>  
Zoran A. Zolinski<sup>1</sup> Principal author.<sup>2</sup> Editorial subcommittee.

In addition to the above, committee associate member Michael J. Pfeiffer, consulting member LeRoy A. Lutz, past member Amfin Rusten, and nonmember Gay S. Puccio (Chairman, Committee 504) were principal authors; Committee 325 member Michael I. Darier was a contributing author.

*This report reviews the state of the art in design, construction, and maintenance of joints in concrete structures subjected to a wide variety of use and environmental conditions. In some cases, the option of eliminating joints is considered. Aspects of various joint sealant materials and jointing techniques are discussed. The reader is referred to ACI 504R for a more comprehensive treatment of sealant materials, and to ACI 224R for a broad discussion of the causes and control of cracking in concrete construction. Chapters in the report focus on various types of structures and structural elements with unique characteristics: buildings, bridges, slabs-on-grade, tunnel linings, canal linings, precast concrete pipe, liquid-retaining structures, walls, and mass concrete.*

**Keywords:** bridges, buildings, canals, canal linings, concrete construction, construction joints, contraction joints, design, environmental engineering, concrete structures, isolation joints, joints, parking lots, pavements, runways, slabs-on-grade, tunnels, tunnel linings, walls.

**CONTENTS****Chapter 1—Introduction, p. 224.3R-2**

- 1.1—Joints in concrete structures
- 1.2—Joint terminology
- 1.3—Movement in concrete structures
- 1.4—Objectives and scope

ACI Committee Reports, Guides, Standard Practices, and Commentaries are intended for guidance in planning, designing, constructing, and inspecting construction. This document is intended for the use of individuals who are competent to evaluate the significance and limitations of its content and recommendations and who will accept responsibility for the application of the material it contains. The American Concrete Institute disclaims any and all responsibility for the stated principles. The Institute shall not be liable for any loss or damage arising therefrom.

Reference to this document shall not be made in contract documents. If items found in this document are desired by the Architect/Engineer to be a part of the contract documents, they shall be restated in mandatory language for incorporation by the Architect/Engineer.

**Chapter 2—Sealant materials and jointing techniques, p. 224.3R-4**

- 2.1—Introduction
- 2.2—Required properties of joint sealants
- 2.3—Commercially available materials
- 2.4—Field-molded sealants
- 2.5—Accessory materials
- 2.6—Preformed sealants
- 2.7—Compression seals
- 2.8—Jointing practice

**Chapter 3—Buildings, p. 224.3R-8**

- 3.1—Introduction
- 3.2—Construction joints
- 3.3—Contraction joints
- 3.4—Isolation or expansion joints

**Chapter 4—Bridges, p. 224.3R-14**

- 4.1—Introduction
- 4.2—Construction joints
- 4.3—Bridges with expansion joints
- 4.4—Bridges without expansion joints

**Chapter 5—Slabs-on-grade, p. 224.3R-20**

- 5.1—Introduction
- 5.2—Contraction joints

ACI 224.3R-95 became effective August 3, 1995.  
Copyright © 1995, American Concrete Institute.

All rights reserved including rights of reproduction and use in any form or by any means, including the making of copies by any photo process, or by electronic or mechanical device, printed, written, or oral, or recording for sound or visual reproduction or for use in any knowledge or retrieval system or device, unless permission in writing is obtained from the copyright proprietors.



- 5.3—Isolation or expansion joints
- 5.4—Construction joints
- 5.5—Special considerations

#### Chapter 6—Pavements, p. 224.3R-24

- 6.1—Introduction
- 6.2—Contraction joints
- 6.3—Isolation or expansion joints
- 6.4—Construction joints
- 6.5—Hinge or warping joints
- 6.6—Parking lots

#### Chapter 7—Tunnels, canal linings, and pipes, p. 224.3R-29

- 7.1—Introduction
- 7.2—Concrete tunnel linings
- 7.3—Concrete canal linings
- 7.4—Concrete pipe

#### Chapter 8—Walls, p. 224.3R-32

- 8.1—Introduction
- 8.2—Types of joints in concrete walls
- 8.3—Contraction joints
- 8.4—Isolation or expansion joints
- 8.5—Construction joints

#### Chapter 9—Liquid-retaining structures, p. 224.3R-35

- 9.1—Introduction
- 9.2—Contraction joints
- 9.3—Isolation or expansion joints
- 9.4—Construction joints

#### Chapter 10—Mass concrete, p. 224.3R-38

- 10.1—Introduction
- 10.2—Contraction joints
- 10.3—Construction joints

#### Chapter 11—References, p. 224.3R-38

- 11.1—Recommended references
- 11.2—Cited references

#### Appendix A—Temperatures used for calculation of $\Delta T$ , p. 224.3R-41

### CHAPTER 1—INTRODUCTION

#### 1.1—Joints in concrete structures

Joints are necessary in concrete structures for a variety of reasons. Not all concrete in a given structure can be placed continuously, so there are construction joints that allow for work to be resumed after a period of time. Since concrete undergoes volume changes, principally related to shrinkage and temperature changes, it can be desirable to provide joints and thus relieve tensile or compressive stresses that would be induced in the structure. Alternately, the effect of volume changes can be considered just as other load effects are considered in building design. Various concrete structural ele-

ments are supported differently and independently, yet meet and match for functional and architectural reasons. In this case, compatibility of deformation is important, and joints may be required to isolate various members.

Many engineers view joints as artificial cracks, or as means to either avoid or control cracking in concrete structures. It is possible to create weakened planes in a structure, so cracking occurs in a location where it may be of little importance, or have little visual impact. For these reasons, ACI Committee 224—Cracking, has developed this report as an overview of the design, construction, and maintenance of joints in various types of concrete structures, expanding on the currently limited treatment in ACI 224R. While other ACI Committees deal with specific types of structures, and joints in those structures, this is the first ACI report to synthesize information on joint practices into a single document. Committee 224 hopes that this synthesis will promote continued re-evaluation of recommendations for location and spacing of joints, and the development of further rational approaches.

Diverse and sometimes conflicting guidelines are found for joint spacing. Table 1.1 reports various recommendations for contraction joints, and Table 1.2 provides a sampling of requirements for expansion joints. It is hoped that, by bringing the information together in this Committee Report, recommendations for joint spacing may become more rational, and possibly more uniform.

Aspects of construction and structural behavior are important when comparing the recommendations of Tables 1.1 and

**Table 1.1—Contraction joint spacings**

| Author         | Spacing                                                                                                                                                                                       |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Merrill (1943) | 20 ft (6 m) for walls with frequent openings, 25 ft (7.5 m) in solid walls.                                                                                                                   |
| Fintel (1974)  | 15 to 20 ft (4.5 to 6 m) for walls and slabs on grade. Recommends joint placement at abrupt changes in plan and at changes in building height to account for potential stress concentrations. |
| Wood (1981)    | 20 to 30 ft (6 to 9 m) for walls.                                                                                                                                                             |
| PCA (1982)     | 20 to 25 ft (6 to 7.5 m) for walls depending on number of openings.                                                                                                                           |
| ACI 302.1R     | 15 to 20 ft (4.5 to 6 m) recommended until 302.1R-89, then changed to 24 to 36 times slab thickness.                                                                                          |
| ACI 350R-83    | 30 ft (9 m) in sanitary structures.                                                                                                                                                           |
| ACI 350R       | Joint spacing varies with amount and grade of shrinkage and temperature reinforcement.                                                                                                        |
| ACI 224R-92    | One to three times the height of the wall in solid walls.                                                                                                                                     |

**Table 1.2—Expansion joint spacings**

| Author                              | Spacing                                                                                                                                                                                      |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lewerenz (1907)                     | 75 ft (23 m) for walls.                                                                                                                                                                      |
| Hunter (1953)                       | 80 ft (25 m) for walls and insulated roofs, 30 to 40 ft (9 to 12 m) for uninsulated roofs.                                                                                                   |
| Billig (1960)                       | 100 ft (30 m) maximum building length without joints. Recommends joint placement at abrupt changes in plan and at changes in building height to account for potential stress concentrations. |
| Wood (1981)                         | 100 to 120 ft (30 to 35 m) for walls.                                                                                                                                                        |
| Indian Standards Institution (1964) | 45 m (= 148 ft) maximum building length between joints.                                                                                                                                      |
| PCA (1982)                          | 200 ft (60 m) maximum building length without joints, 120 ft (36 m) in sanitary structures partially filled with liquid (closer spacings required when no liquid present).                   |
| ACI 350R-83                         |                                                                                                                                                                                              |

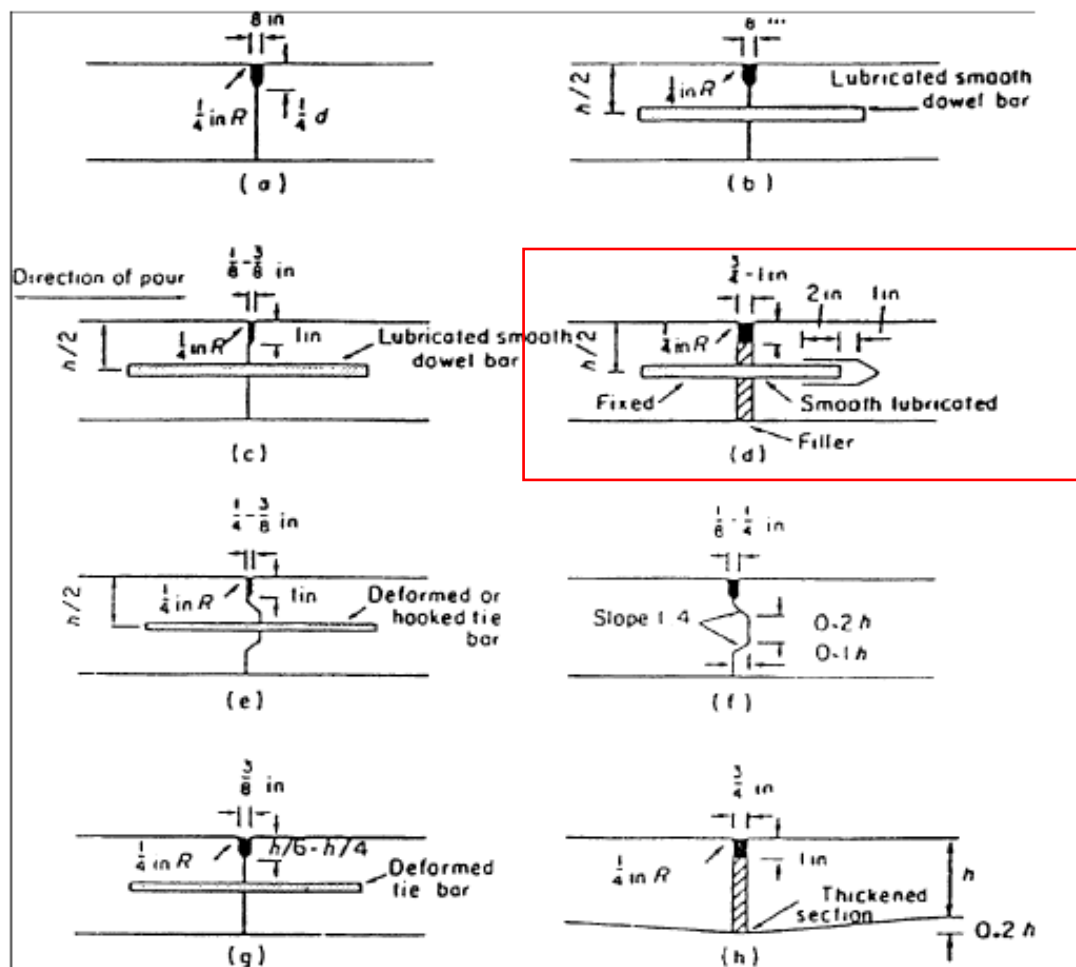


Fig. 6.1—Pavement joints

sign will allow infiltration of water and incompressibles that result in pumping, erosion, and loss of support in the sub-base. Pavement failure can then result.

Joints for concrete pavements can be divided according to their desired function into the usual three basic groups: contraction joints, isolation, or expansion joints, and construction joints. Longitudinal joints as special cases of contraction/construction joints also are recognized in pavement construction. They allow a hinge-like action and control the effects of warping. Fig. 6.1 shows typical details of pavement joints. ACI 325.7R discusses post-tensioned highway slabs.

## 6.2—Contraction joints

Contraction joints are transverse joints whose function is to relieve tensile stresses resulting from contraction and curling of the concrete. They are not intended to relieve the ef-

fects of large expansions. However, pavements are unlikely to expand to a volume greater than when the concrete is placed, so these joints can accommodate the required movements. In conventional groove contraction joints [Fig. 6.1(a) and Fig. 6.1(b)] a groove at least  $1/4$  of the slab thickness (or at least  $1/2$  slab thickness for pavements built on stabilized base, according to PCA 1992a) is cut or formed at the pavement surface to force cracks to occur at the joint location. For cut grooves, concrete is sawed as soon as possible after placing the concrete. Sawing is delayed until the concrete does not ravel (see Chapter 2). Transverse grooves are cut first. According to the American Concrete Pavement Association (ACPA 1991), contraction joints at 60- to 80-ft (20- to 25-m) spacings may be cut first in some cases. The initial cut should be at least  $1/8$ -in. (3-mm) wide to create a functioning joint; joints may be recut and widened later to fashion a prop-







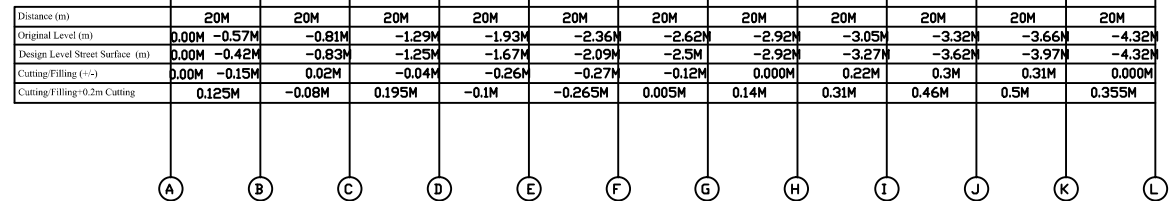
# LEVEL COMPUTATION



Spreadsheet Developed by: Karimullah Ataee, Sr. Engineer Unite, UNHABITAT, Afghanistan.

|             |                |              |       |            |                   |                  |       |                        |        |  |  |
|-------------|----------------|--------------|-------|------------|-------------------|------------------|-------|------------------------|--------|--|--|
| Project:    | Center of road | house corner |       |            |                   |                  |       |                        |        |  |  |
| Province    | Kabul          | Observed b   |       | Computed b | Eng. Ghulam Sayed | S Backsights (m) | 0.630 |                        |        |  |  |
| District    | D06-GA22       | Location     | GA22  | Circuit:   | Street-3          | S Foresights (m) | 0.000 |                        |        |  |  |
| Circuit Ty  | Open           | 1st RL       | 0.000 | Last RL    |                   | Date:            |       | S (Backsights-Foresigh | 0.630  |  |  |
| Cal last RL |                | Error:       | 0.00  | Nr of Corr | 0                 |                  |       | First RL - last RL (m) | -0.630 |  |  |

| Input Rows |       | Intermedi         | Fore          | S            | Collimation    | Reduced Levels, RL (m) |           |            |           | Σ H          | Remarks |
|------------|-------|-------------------|---------------|--------------|----------------|------------------------|-----------|------------|-----------|--------------|---------|
| Point      | (m)   | ate Sight, IS (m) | Sight, FS (m) | Distance (m) | Height, CH (m) | Calculated             | Corr. Fac | Correction | Corrected | Distance (m) |         |
| 1          | 0.630 |                   |               | 0.00         | 0.63           | 0.00                   | 0         |            | 0.000     | 0.001        |         |
| 2          |       | 1.200             |               | 20.00        | 0.630          | -0.57                  | 0         |            | -0.570    | 0.001        |         |
| 3          |       | 1.440             |               | 20.00        | 0.630          | -0.81                  | 0         |            | -0.810    | 0.001        |         |
| 4          |       | 1.925             |               | 20.00        | 0.630          | -1.30                  | 0         |            | -1.295    | 0.001        |         |
| 5          | 0.740 |                   | 2.560         | 20.00        | -1.190         | -1.93                  | 1         |            | -1.930    | 0.001        |         |
| 6          |       | 1.170             |               | 20.00        | -1.190         | -2.36                  | 1         |            | -2.360    | 0.001        |         |
| 7          |       | 1.430             |               | 20.00        | -1.190         | -2.62                  | 1         |            | -2.620    | 0.001        |         |
| 8          |       | 1.730             |               | 20.00        | -1.190         | -2.92                  | 1         |            | -2.920    | 0.001        |         |
| 9          |       | 1.855             |               | 20.00        | -1.190         | -3.05                  | 1         |            | -3.045    | 0.001        |         |
| 10         | 1.400 |                   | 2.130         | 20.00        | -1.920         | -3.32                  | 2         |            | -3.320    | 0.001        |         |
| 11         |       | 1.735             |               | 20.00        | -1.920         | -3.66                  | 2         |            | -3.655    | 0.001        |         |
| 12         |       |                   | 2.400         | 20.00        | -1.920         | -4.32                  | 3         |            | -4.320    | 0.001        |         |
|            |       |                   |               | 220.00       |                |                        |           |            |           |              |         |



GA-22 Street #3  
Scale: NTS

| CLIENT           |  | SHEET CONTENTS    |                 | NAMES |                                 | POSITION          | SIGNATURE | DATE | SHEET NO.   | REVISION    | DATE     |
|------------------|--|-------------------|-----------------|-------|---------------------------------|-------------------|-----------|------|-------------|-------------|----------|
| CITY FOR ALL CFA |  | Street #3 Profile | PROVINCE        | Kabul | DESIGNED : Ghulam Sayed Bromand | District Engineer |           |      | Sheet - 1/1 | FIRST ISSUE | Oct 2018 |
|                  |  |                   | District        | 06    | DRAWN : Ghulam Sayed Bromand    | District Engineer |           |      |             |             |          |
|                  |  |                   | MC              | Kabul | CHECKED : Majdoodurrahman Habib |                   |           |      | SCALE:      |             |          |
|                  |  |                   | UNH PROJECT NO. | NO.   | APPROVED SR ENG:                |                   |           |      | AS SHOWN    |             |          |

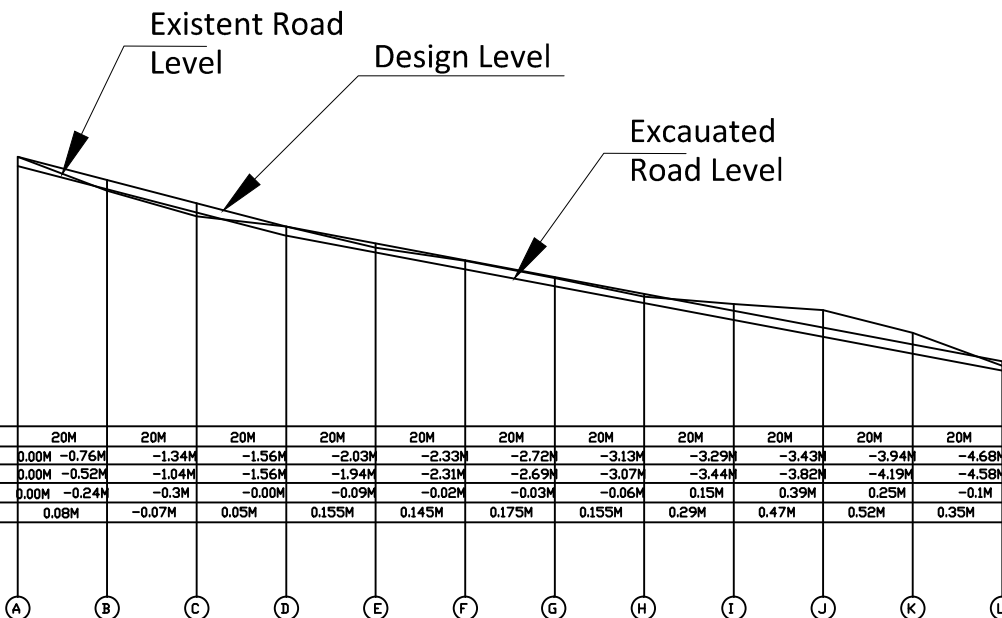
# LEVEL COMPUTATION



Spreadsheet Developed by: Karimullah Ataee, Sr. Engineer Unite, UN-HABITAT, Afghanistan.

|               |                        |                   |
|---------------|------------------------|-------------------|
| Project:      | Center of road         | house corner      |
| Province:     | Kabul                  | Observed b        |
| District:     | D06-GA22               | Location GA22     |
| Circuit Type: | Open                   | 1st RL 0.000      |
| Cal last RL   | Error:                 | 0.00              |
|               | Nr of Corr             | 0                 |
|               | Computed b             | Eng. Ghulam Sayed |
|               | S Backsights (m)       | 0.720             |
|               | S Foresights (m)       | 0.000             |
|               | S (Backsights-Foresigh | 0.720             |
|               | First RL - last RL (m) | -0.720            |

| Input Point | Back Sight, BS (m) | Intermediate Sight, IS (m) | Fore Sight, FS (m) | S Distance (m) | Collimation Height, CH (m) | Reduced Levels, RL (m) |       |     |            | Σ H Distance (m) | Remarks |
|-------------|--------------------|----------------------------|--------------------|----------------|----------------------------|------------------------|-------|-----|------------|------------------|---------|
|             |                    |                            |                    |                |                            | Calculated             | Corr. | Fac | Correction | Corrected        |         |
| 1           | 0.720              |                            |                    | 0.00           | 0.72                       | 0.00                   | 0     |     |            | 0.000            | 0.001   |
| 2           |                    | 1.480                      |                    | 20.00          | 0.720                      | -0.76                  | 0     |     |            | -0.760           | 0.001   |
| 3           |                    | 2.055                      |                    | 20.00          | 0.720                      | -1.34                  | 0     |     |            | -1.335           | 0.001   |
| 4           |                    | 2.280                      |                    | 20.00          | 0.720                      | -1.56                  | 0     |     |            | -1.560           | 0.001   |
| 5           | 0.650              |                            | 2.750              | 20.00          | -1.380                     | -2.03                  | 1     |     |            | -2.030           | 0.001   |
| 6           |                    | 0.945                      |                    | 20.00          | -1.380                     | -2.33                  | 1     |     |            | -2.325           | 0.001   |
| 7           |                    | 1.335                      |                    | 20.00          | -1.380                     | -2.72                  | 1     |     |            | -2.715           | 0.001   |
| 8           |                    | 1.745                      |                    | 20.00          | -1.380                     | -3.13                  | 1     |     |            | -3.125           | 0.001   |
| 9           |                    | 1.910                      |                    | 20.00          | -1.380                     | -3.29                  | 1     |     |            | -3.290           | 0.001   |
| 10          | 1.235              |                            | 2.050              | 20.00          | -2.195                     | -3.43                  | 2     |     |            | -3.430           | 0.001   |
| 11          |                    | 1.740                      |                    | 20.00          | -2.195                     | -3.94                  | 2     |     |            | -3.935           | 0.001   |
| 12          |                    |                            | 2.480              | 20.00          | -2.195                     | -4.68                  | 3     |     |            | -4.675           | 0.001   |
|             |                    |                            |                    | 220.00         |                            |                        |       |     |            |                  |         |



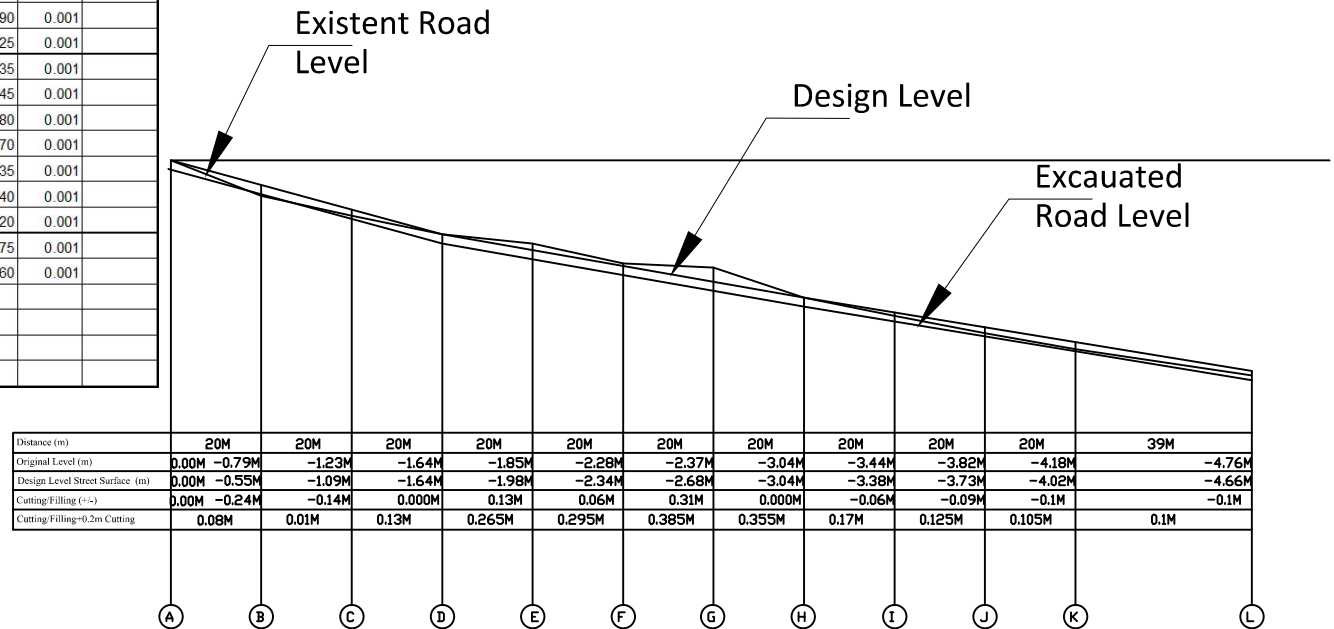
GA-22 Street #2  
Scale: NTS

| CLIENT           |  |  | SHEET CONTENTS    |                 | NAMES |                                 | POSITION          | SIGNATURE | DATE | SHEET NO.   | REVISION    | DATE     |  |
|------------------|--|--|-------------------|-----------------|-------|---------------------------------|-------------------|-----------|------|-------------|-------------|----------|--|
| CITY FOR ALL CFA |  |  | Street #2 Profile | PROVINCE        | Kabul | DESIGNED : Ghulam Sayed Bromand | District Engineer |           |      | Sheet - 1/1 | FIRST ISSUE | Oct 2018 |  |
|                  |  |  |                   | District        | 06    | DRAWN : Ghulam Sayed Bromand    | District Engineer |           |      |             |             |          |  |
|                  |  |  |                   | MC              | Kabul | CHECKED : Majdoodurrahman Habib |                   |           |      | SCALE:      |             |          |  |
|                  |  |  |                   | UNH PROJECT NO. | NO.   | APPROVED SR ENG:                |                   |           |      | AS SHOWN    |             |          |  |

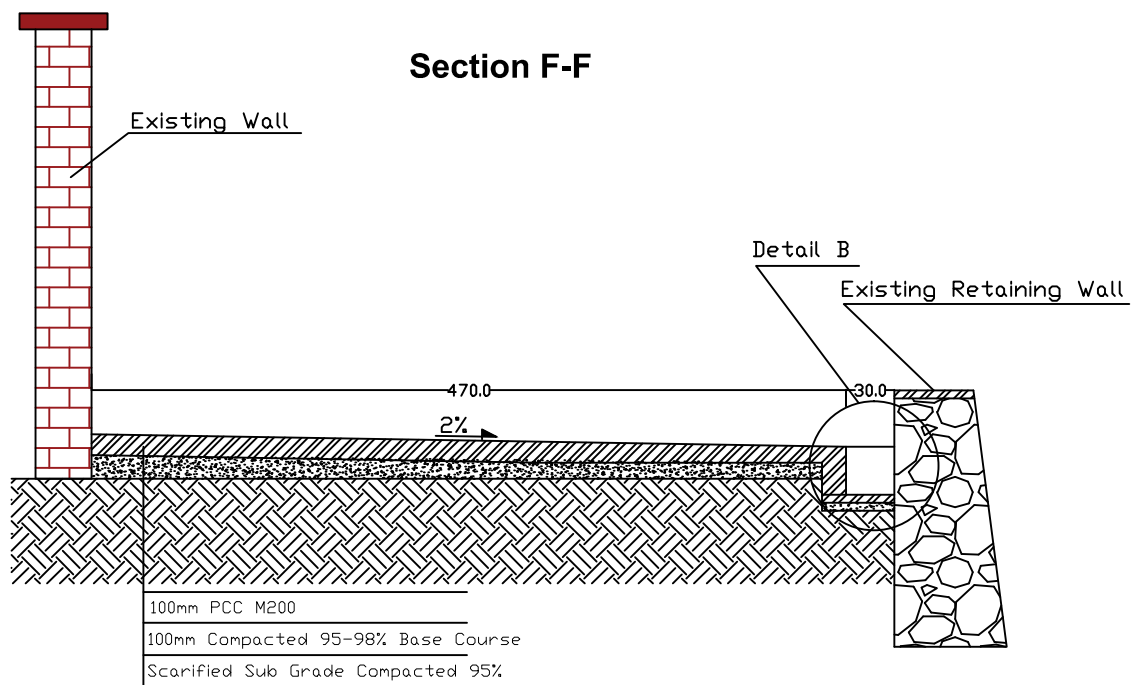
**UN HABITAT**  
FOR A BETTER URBAN FUTURE

|          |                |  |              |
|----------|----------------|--|--------------|
| Project: | Center of road |  | house corner |
|----------|----------------|--|--------------|

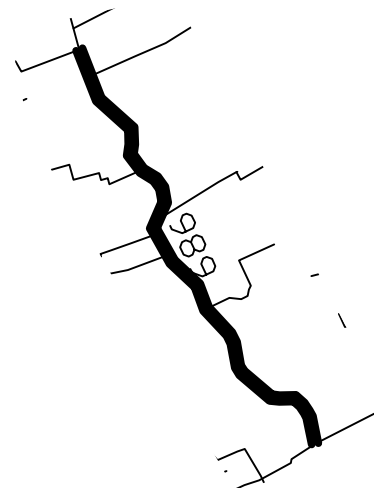
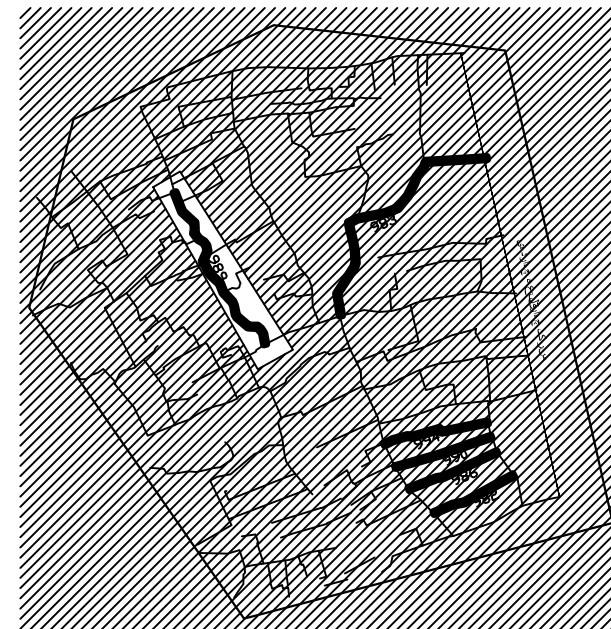
| Input Rows |        | Intermediate Sight, IS (m) | Fore Sight, FS (m) | S Distance (m) | Collimation Height, CH (m) | Reduced Levels, RL (m) |           |            |           | Σ H Distance (m) | Remarks |
|------------|--------|----------------------------|--------------------|----------------|----------------------------|------------------------|-----------|------------|-----------|------------------|---------|
| Point      | BS (m) |                            |                    |                |                            | Calculated             | Corr. Fac | Correction | Corrected |                  |         |
| 1          | 0.615  |                            |                    |                | 0.615                      | 0.000                  | 0         |            | 0.000     | 0.001            |         |
| 2          |        | 1.405                      |                    | 20.00          | 0.615                      | -0.790                 | 0         |            | -0.790    | 0.001            |         |
| 3          |        | 1.840                      |                    | 20.00          | 0.615                      | -1.225                 | 0         |            | -1.225    | 0.001            |         |
| 4          |        | 2.250                      |                    | 20.00          | 0.615                      | -1.635                 | 0         |            | -1.635    | 0.001            |         |
| 5          | 0.845  |                            | 2.460              | 20.00          | -1.000                     | -1.845                 | 1         |            | -1.845    | 0.001            |         |
| 6          |        | 1.280                      |                    | 20.00          | -1.000                     | -2.280                 | 1         |            | -2.280    | 0.001            |         |
| 7          |        | 1.370                      |                    | 20.00          | -1.000                     | -2.370                 | 1         |            | -2.370    | 0.001            |         |
| 8          | 0.775  |                            | 2.035              | 20.00          | -2.260                     | -3.035                 | 2         |            | -3.035    | 0.001            |         |
| 9          |        | 1.180                      |                    | 20.00          | -2.260                     | -3.440                 | 2         |            | -3.440    | 0.001            |         |
| 10         |        | 1.560                      |                    | 20.00          | -2.260                     | -3.820                 | 2         |            | -3.820    | 0.001            |         |
| 11         |        | 1.915                      |                    | 20.00          | -2.260                     | -4.175                 | 2         |            | -4.175    | 0.001            |         |
| 12         |        |                            | 2.500              | 39.00          | -2.260                     | -4.760                 | 3         |            | -4.760    | 0.001            |         |
|            |        |                            |                    |                |                            |                        |           |            |           |                  |         |
|            |        |                            |                    |                |                            |                        |           |            |           |                  |         |
|            |        |                            |                    |                |                            |                        |           |            |           |                  |         |
|            |        |                            |                    | 239.00         |                            |                        |           |            |           |                  |         |



|                  |  |                   |  |                 |       |                                 |                   |      |             |             |          |
|------------------|--|-------------------|--|-----------------|-------|---------------------------------|-------------------|------|-------------|-------------|----------|
| CLIENT           |  | SHEET CONTENTS    |  | NAMES           |       | POSITION                        | SIGNATURE         | DATE | SHEET NO.   | REVISION    | DATE     |
| CITY FOR ALL CFA |  | Street #1 Profile |  | PROVINCE        | Kabul | DESIGNED : Ghulam Sayed Bromand | District Engineer |      | Sheet - 1/1 | FIRST ISSUE | Oct 2018 |
|                  |  |                   |  | District        | 06    | DRAWN : Ghulam Sayed Bromand    | District Engineer |      |             |             |          |
|                  |  |                   |  | MC              | Kabul | CHECKED : Majdoodurahman Habib  |                   |      |             |             |          |
|                  |  |                   |  | UNH PROJECT NO. | NO.   | APPROVED SR ENG:                |                   |      |             | SCALE:      |          |
|                  |  |                   |  |                 |       |                                 |                   |      | AS SHOWN    |             |          |



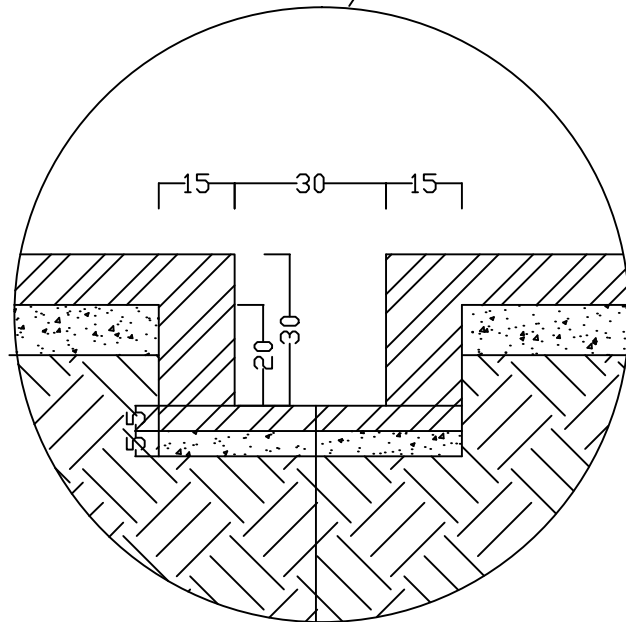
Section F-F Street #6 L=290m  
From 0+000 up to 0+250 width of pavement 4.7m



| CLIENT           |  |  | SHEET CONTENTS                 |                 |       | NAMES                           |                   | POSITION | SIGNATURE | DATE | SHEET NO.   | REVISION    | DATE     |
|------------------|--|--|--------------------------------|-----------------|-------|---------------------------------|-------------------|----------|-----------|------|-------------|-------------|----------|
| CITY FOR ALL CFA |  |  | Street #6 Plan and Section F-F | PROVINCE        | Kabul | DESIGNED : Ghulam Sayed Bromand | District Engineer |          |           |      | Sheet - 1/1 | FIRST ISSUE | Oct 2018 |
|                  |  |  |                                | District        | 06    | DRAWN : Ghulam Sayed Bromand    | District Engineer |          |           |      |             |             |          |
|                  |  |  |                                | MC              | Kabul | CHECKED : Majidodurrahman Habib |                   |          |           |      | SCALE:      |             |          |
|                  |  |  |                                | UNH PROJECT NO. | NO.   | APPROVED SR ENG:                |                   |          |           |      | AS SHOWN    |             |          |



# Detail A

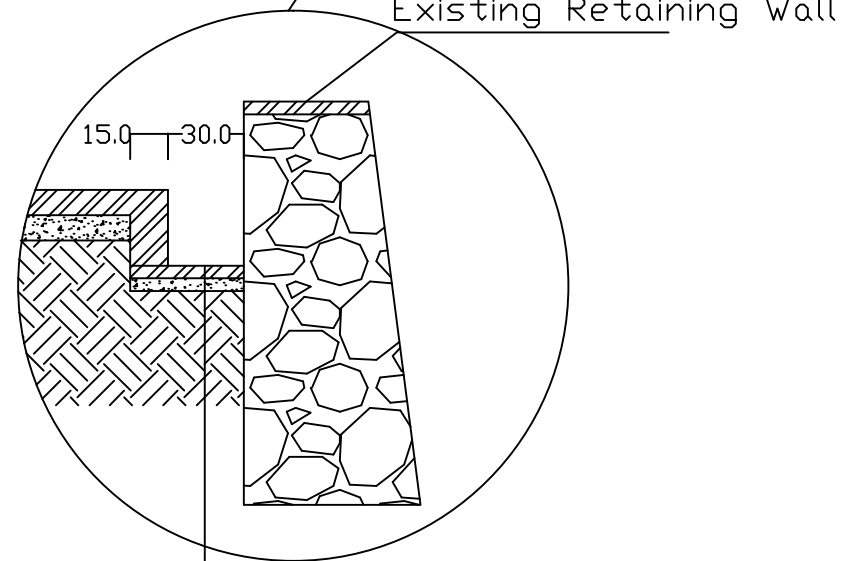


50mm PCC M200

50mm Compacted Base Course

Scarified Sub Grade Compacted 95%

# Detail B

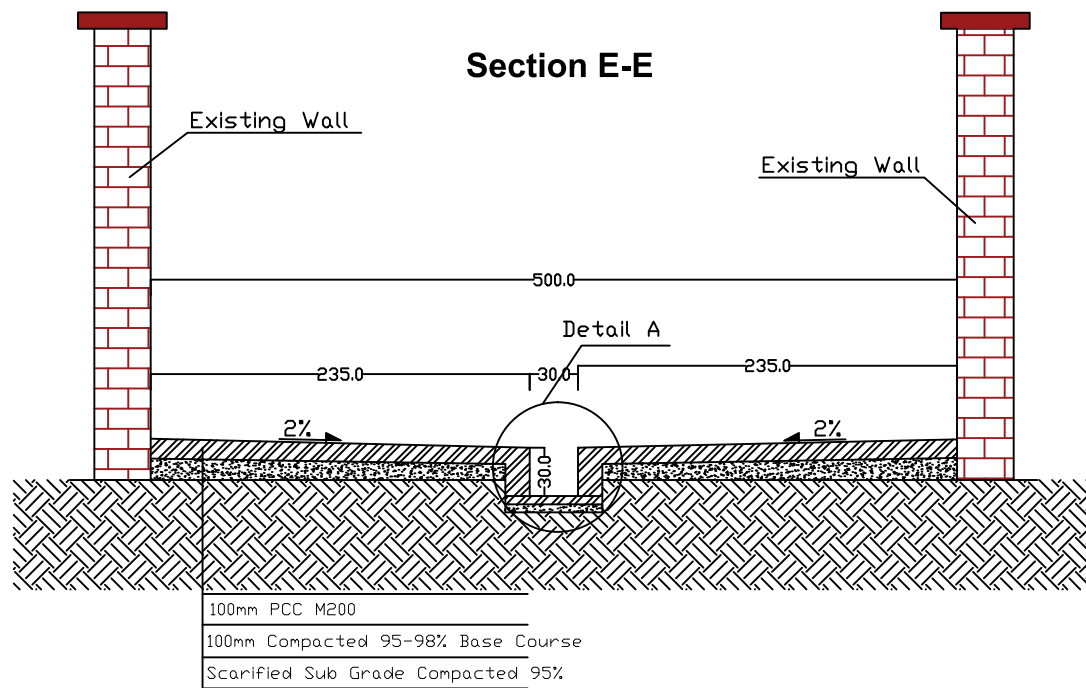


50mm PCC M200

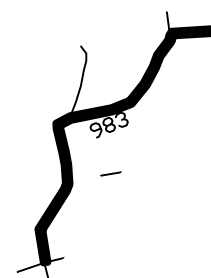
50mm Compacted Base Course

Scarified Sub Grade Compacted 95%

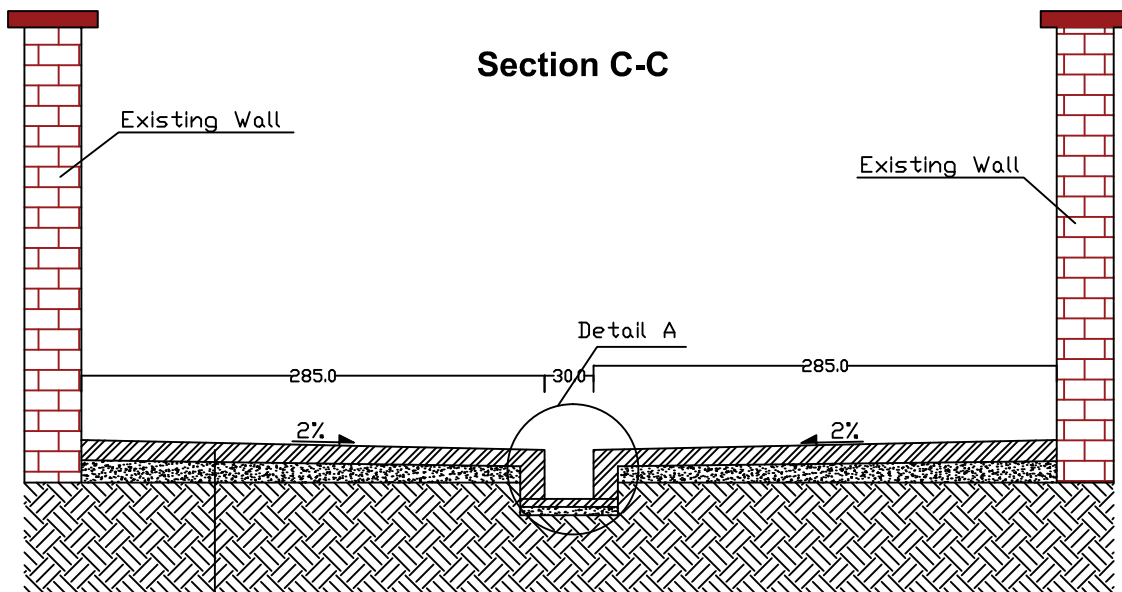
| CLIENT           |  | SHEET CONTENTS | SHEET CONTENTS  |       | NAMES                           |                   | POSITION | SIGNATURE | DATE        | SHEET NO.   | REVISION | DATE |
|------------------|--|----------------|-----------------|-------|---------------------------------|-------------------|----------|-----------|-------------|-------------|----------|------|
| CITY FOR ALL CFA |  |                | PROVINCE        | Kabul | DESIGNED : Ghulam Sayed Bromand | District Engineer |          |           | Sheet - 1/1 | FIRST ISSUE | Oct 2018 |      |
|                  |  |                | District        | 06    | DRAWN : Ghulam Sayed Bromand    | District Engineer |          |           |             |             |          |      |
|                  |  |                | MC              | Kabul | CHECKED : Majidodurrahman Habib |                   |          |           | SCALE:      |             |          |      |
|                  |  |                | UNH PROJECT NO. | NO.   | APPROVED SR ENG:                |                   |          |           | AS SHOWN    |             |          |      |



Section E-E Street #5 L=340m  
From 0+000 up to 0+340 width of pavement 4.7m

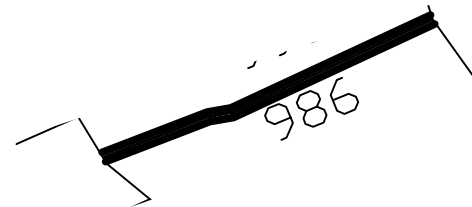
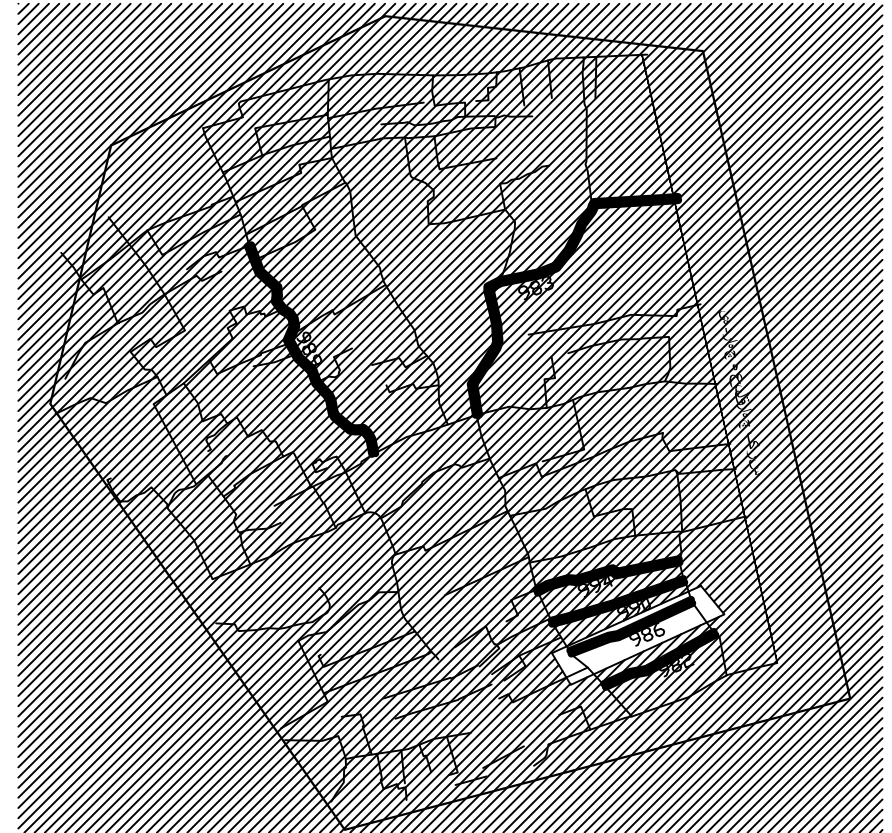


| CLIENT       |     | SHEET CONTENTS                 |                 | NAMES |                                 | POSITION          | SIGNATURE | DATE | SHEET NO.   | REVISION    | DATE     |
|--------------|-----|--------------------------------|-----------------|-------|---------------------------------|-------------------|-----------|------|-------------|-------------|----------|
| CITY FOR ALL | CFA | Street #5 Plan and Section E-E | PROVINCE        | Kabul | DESIGNED : Ghulam Sayed Bromand | District Engineer |           |      | Sheet - 1/1 | FIRST ISSUE | Oct 2018 |
|              |     |                                | District        | 06    | DRAWN : Ghulam Sayed Bromand    | District Engineer |           |      |             |             |          |
|              |     |                                | MC              | Kabul | CHECKED : Majidodurrahman Habib |                   |           |      | SCALE:      |             |          |
|              |     |                                | UNH PROJECT NO. | NO.   | APPROVED SR ENG:                |                   |           |      | AS SHOWN    |             |          |

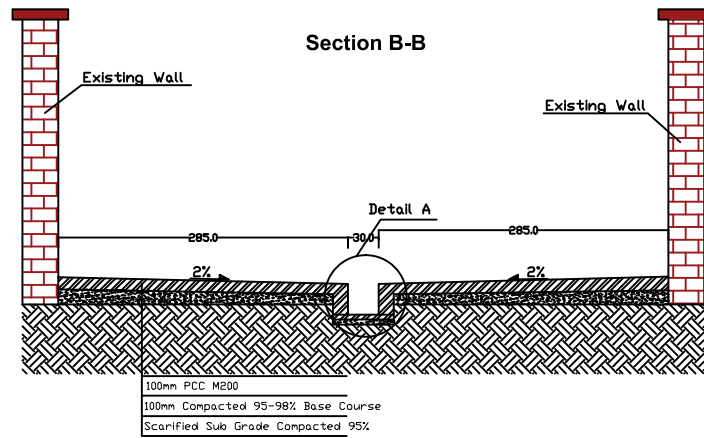


100mm PCC M200  
 100mm Compacted 95-98% Base Course  
 Scarified Sub Grade Compacted 95%

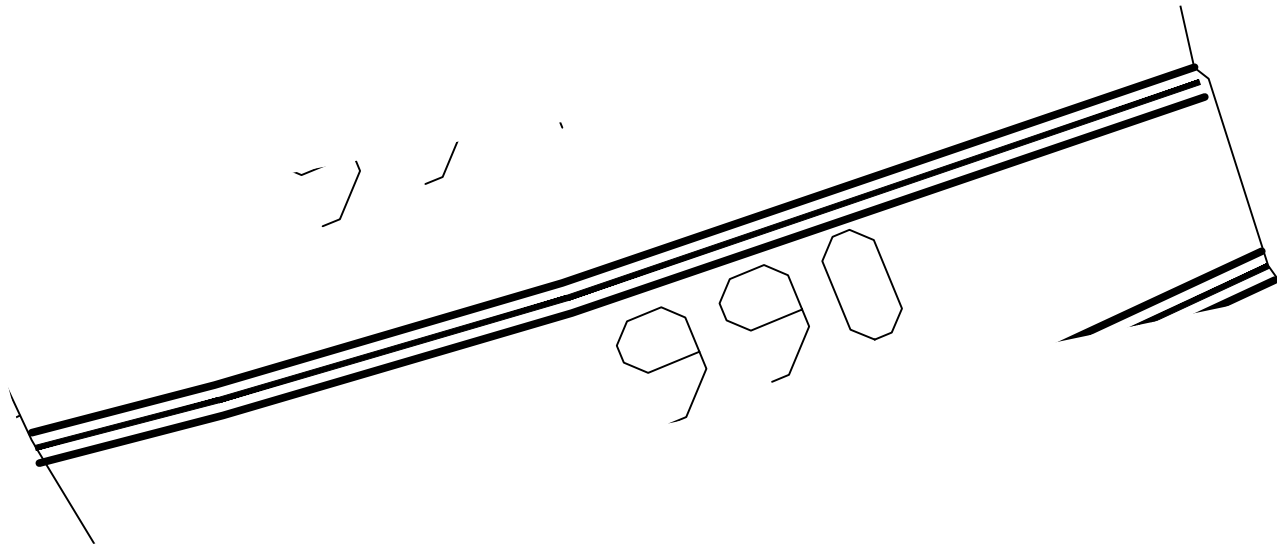
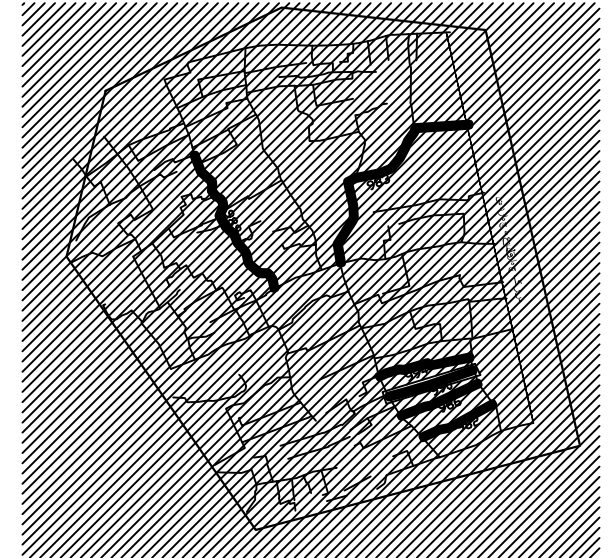
Section C-C Street #3 L=220m  
 From 0+000 up to 0+220 width of pavement 5.7m



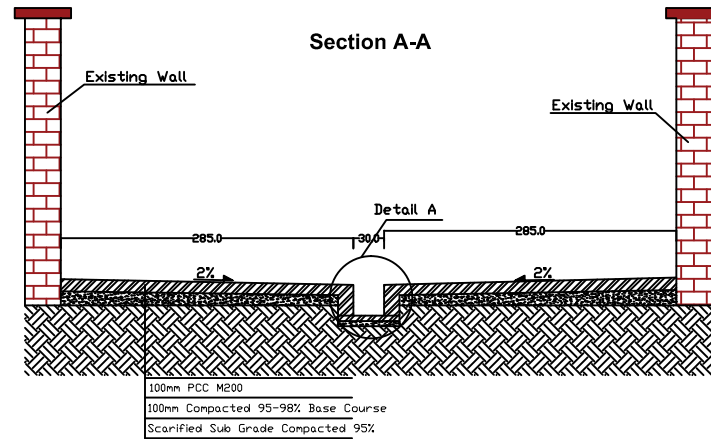
| CLIENT           |  | SHEET CONTENTS                 |                 | NAMES |                                 | POSITION | SIGNATURE         | DATE | SHEET NO.   | REVISION    | DATE     |
|------------------|--|--------------------------------|-----------------|-------|---------------------------------|----------|-------------------|------|-------------|-------------|----------|
| CITY FOR ALL CFA |  | Street #3 Plan and Section C-C | PROVINCE        | Kabul | DESIGNED : Ghulam Sayed Bromand |          | District Engineer |      | Sheet - 1/1 | FIRST ISSUE | Oct 2018 |
|                  |  |                                | District        | 06    | DRAWN : Ghulam Sayed Bromand    |          | District Engineer |      |             |             |          |
|                  |  |                                | MC              | Kabul | CHECKED : Majidurrahman Habib   |          |                   |      |             |             |          |
|                  |  |                                | UNH PROJECT NO. | NO.   | APPROVED SR ENG:                |          |                   |      |             |             |          |
|                  |  |                                |                 |       |                                 |          |                   |      | AS SHOWN    |             |          |



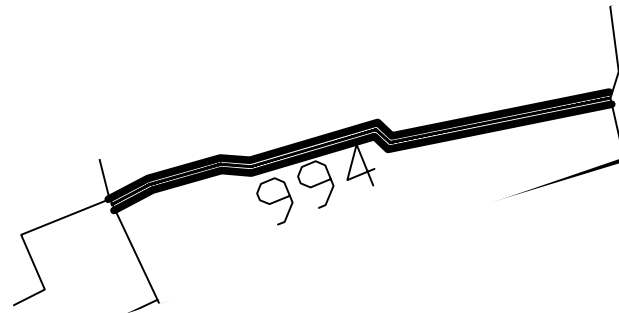
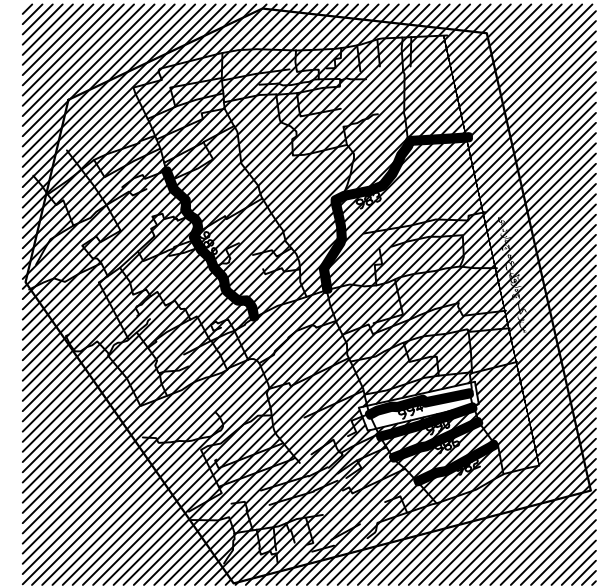
Section B-B Street #2 L=220m  
From 0+000 up to 0+220 width of pavement 5.7m



| CLIENT           |  | SHEET CONTENTS | NAMES           |       | POSITION                        | SIGNATURE         | DATE | SHEET NO.   | REVISION    | DATE     |
|------------------|--|----------------|-----------------|-------|---------------------------------|-------------------|------|-------------|-------------|----------|
| CITY FOR ALL CFA |  |                | PROVINCE        | Kabul | DESIGNED : Ghulam Sayed Bromand | District Engineer |      | Sheet - 1/1 | FIRST ISSUE | Oct 2018 |
|                  |  |                | District        | 06    | DRAWN : Ghulam Sayed Bromand    | District Engineer |      |             |             |          |
|                  |  |                | MC              | Kabul | CHECKED : Majidodurrahman Habib |                   |      | SCALE:      |             |          |
|                  |  |                | UNH PROJECT NO. | NO.   | APPROVED SR ENG:                |                   |      | AS SHOWN    |             |          |

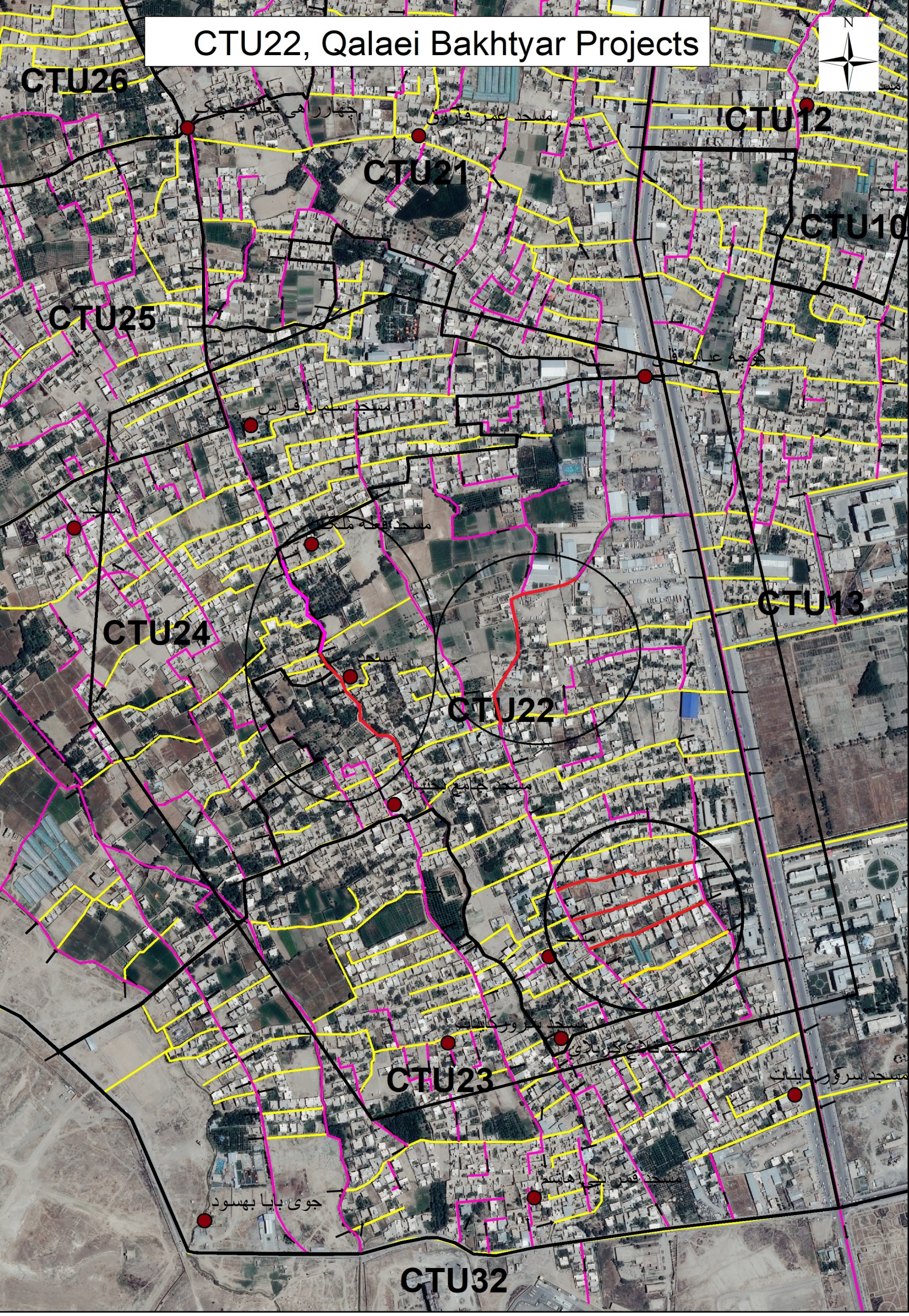


Section A-A Street #1 L=239m  
From 0+000 up to 0+239 width of pavement 5.7m



| CLIENT           |  |  | SHEET CONTENTS | NAMES           |       | POSITION                        | SIGNATURE         | DATE | SHEET NO.   | REVISION    | DATE     |
|------------------|--|--|----------------|-----------------|-------|---------------------------------|-------------------|------|-------------|-------------|----------|
| CITY FOR ALL CFA |  |  |                | PROVINCE        | Kabul | DESIGNED : Ghulam Sayed Bromand | District Engineer |      | Sheet - 1/1 | FIRST ISSUE | Oct 2018 |
|                  |  |  |                | District        | 06    | DRAWN : Ghulam Sayed Bromand    | District Engineer |      |             |             |          |
|                  |  |  |                | MC              | Kabul | CHECKED : Majidodurrahman Habib |                   |      | SCALE:      |             |          |
|                  |  |  |                | UNH PROJECT NO. | NO.   | APPROVED SR ENG:                |                   |      |             | AS SHOWN    |          |







## City for All (CFA)

## Cost Break Down for Drainage and Road Project

**CIA Title:**

Province

**District:**

**Gozar:**

**Access Improvement ( Pavement of street and drain construction)**

## Kabul

**6.00**

**22.00**

| No | Item                                                                                                                                                                                                                              | Quantity | Unit | Unit cost | Total cost |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|-----------|------------|
|    |                                                                                                                                                                                                                                   |          |      | USD       | USD        |
| 1  | Mobilization, Demobilization and site cleaning آن تجهیز ساحه کار با پاککاری                                                                                                                                                       | 1.00     | LS   |           |            |
| 2  | Base course (mix design included) for street with leveling, 98% compacting and all other required activities 98% تھپہ مواد بیس کورس سرک (با تھپہ مکس دیزاین) معہ ہموار کاری آن با 98 ٹپک کاری و دیگر امورات ایجابی آن             | 683.13   | m3   |           |            |
| 3  | PCC M-200 for street surface (mix design of concrete included) and drainage with casting and all other required activities تھپہ کانکریت مارک 200 برای سرک و جویچہ و ریخت آن در ساحہ با تھپہ مکس دیزاین آن و دیگر امورات ایجابی آن | 790.07   | m3   |           |            |
| 4  | Crash gravel (size 25mm) for base of drainages with leveling and all other required activities تھپہ جغل کرش (سایز ۲۵ ملی) برای جویچہ و ہموار کاری آن با دیگر امورات ایجابی                                                        | 37.10    | m3   |           |            |
| 5  | Curing (10 days) of street and drainage with all other required activities حد اقل 10 روز آبدھی سرک و جویچہ با دیگر امورات ایجابی آن                                                                                               | 7922.40  | M2   |           |            |
| 6  | Shuttering (plywood) for streets and drainages with all required activities قالب بندی کنارہ های سرک و جویچہ از تختہ پلائی وود با دیگر امورات ایجابی آن                                                                            | 641.40   | m2   |           |            |
|    | <b>Total</b>                                                                                                                                                                                                                      |          |      |           | -          |

Note: All Construction material must be approved by responsible Technical Person.

1. PCC must be according to mix design.
2. Water must be clean and drinkable.
3. Steel bar used for concrete joints must be smooth fabricated according to design and free from corrosion.
4. Expansion Joints according to the joint layout.
5. Contraction joints according to the joint layout.
6. Construction joints according to the joint layout.
7. All Joints must be filled by bitumen mastic.
8. Only slump tests are included.